A

FIG.1A-1

FIG.1A-2

B

C

FIG.1B-1

FIG.1B-2

FIG.1C-1

FIG.1C-2

FIG.1C-3

FIG.2A

FIG.2B

FIG.2C

FIG.2D

FIG.2E

FIG.2F

FIG.2G

FIG.2H

FIG.2I

FIG.2J

FIG.2K

FIG.2L

FIG3

219-222: CK2 phosphorylation

205-210: N-myristoylation
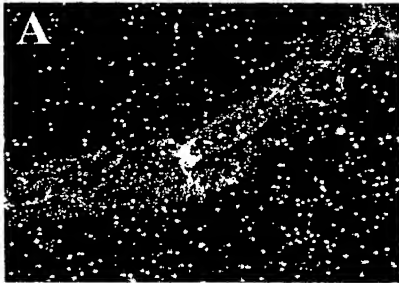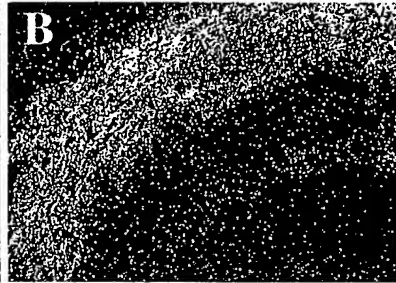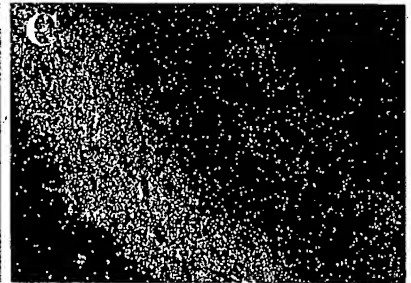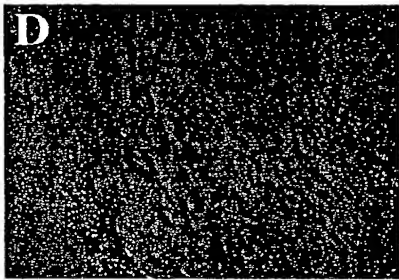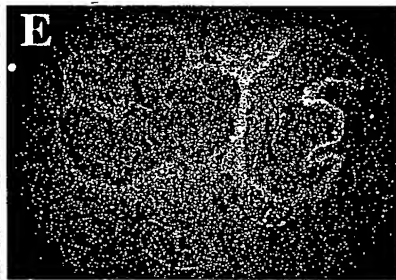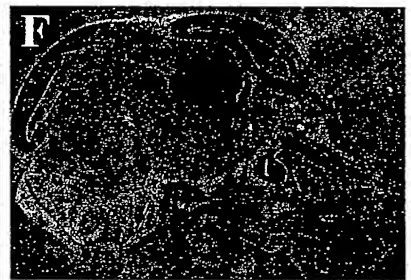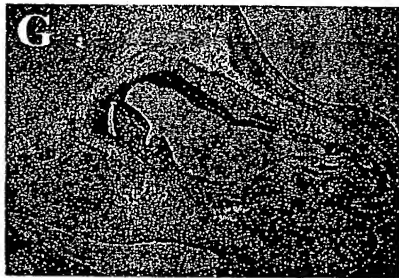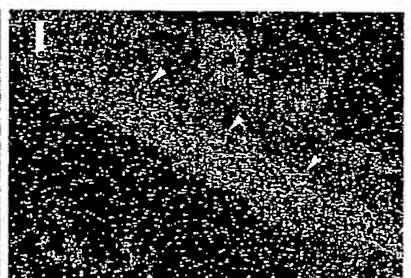201-206: N-myristoylation
197-200: CK2 phosphorylation

188-191: N-glycosylation

165-170: N-myristoylation

146-148: PKC phosphorylation

119-124: N-myristoylation

99-102: CK2 phosphorylation

69-74: N-myristoylation

31-34: CK2 phosphorylation

1-32: transmembrane domain

NH2-
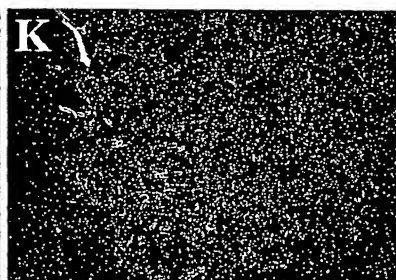
-COOH
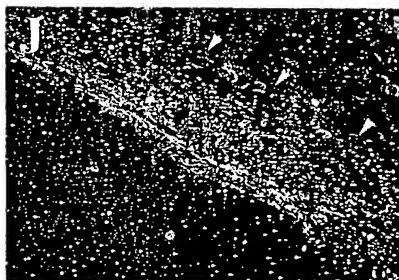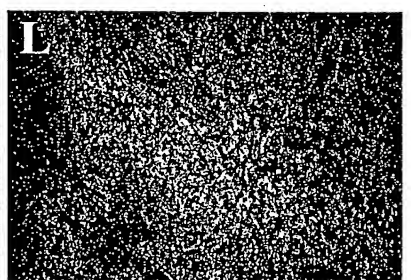
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                    30            40                 50          60          70
Rat   ATGCGGCCGGCCGCAGAGCTGGGC-----CAGACGCTGAGCAGGGCCGGGCTCTGCCGAC
Human ACGAGGGCGGCCTCGGAGCGCGGCGGAGCCAGACGCTGACCACGTTCCT-CTCCTCGGTC
          10            20          30            40          50          60
          80            90          100           110         120         130
Rat   CCCTTTGCCTCCTGCTCTGCGCTTCGCAGCTACCGCACACGATGCACCCCCAAGGCCGCG
Human TCCTCCGCCTCCAGCTCCGCGCTGCCCGGCAGCCGGGAGCCATGCGACCCCAGGGCCCCG
               70            80          90            100    110         120
          140           150         160         170         180         190
Rat   CCGCCTCCCCACAGCTGCTGCTCGGCCTCTTCCTTGTGCTACTGCTGCTTCTGCAGCTGT
Human CCGCCTCCCCGCAGCGGCTCCGCGGCCTCCT-----GCTGCTCCTGCTGCTGCAGCTGC
               130           140         150               160         170
          200           210         220         230         240         250
Rat   CCGCGCCGTCCAGCGCCTCTGAGAATCCCAAGGTGAAGCAAAAAGCGCTGATCCGGCAGA
Human CCGCGCCGTCGAGCGCCTCTGAGATCCCCAAGGGGAAGCAAAAGGCGCAGCTCCGGCAGA
               180           190         200         210         220         230
          260           270         280         290         300         310
Rat   GGGAAGTGGTAGACCTGTATAATGGGATGTGCCTACAAGGACCAGCAGGAGTTCCTGGTC
Human GGGAGGTGGTGGACCTGTATAATGGAATGTGCTTACAAGGGCCAGCAGGAGTGCCTGGTC
               240           250         260         270         280         290
          320           330         340         350         360         370
Rat   GCGATGGGAGCCCTGGGGCCAATGGCATTCCTGGCACACCGGGAATCCCAGGTCGGGATG
Human GAGACGGGAGCCCTGGGGCCAATGGCATTCCGGGTACACCTGGGATCCCAGGTCGGGATG
               300           310         320         330         340         350
          380           390         400         410         420         430
Rat   GATTCAAAGGAGAGAAAGGGGAGTGCTTAAGGGAAAGCTTTGAGGAATCCTGGACCCCAA
Human GATTCAAAGGAGAAAAGGGGGAATGTCTGAGGGAAAGCTTTGAGGAGTCCTGGACACCCA
               360           370         380         390         400         410
          440           450         460         470         480         490
Rat   ACTACAAGCAGTGTTCATGGAGTTCACTTAATTATGGCATAGATCTTGGGAAAATTGCGG
Human ACTACAAGCAGTGTTCATGGAGTTCATTGAATTATGGCATAGATCTTGGGAAAATTGCGG
    420         430           440          450         460         470
          500           510         520         530         540         550
Rat   AATGTACATTCACAAAGATGCGATCCAACAGCGCTCTTCGAGTTCTGTTCAGTGGCTCGC
Human AGTGTACATTTACAAAGATGCGTTCAAATAGTGCTCTAAGAGTTTTGTTCAGTGGCTCAC
               480           490         500         510         520         530

          560           570         580         590         600         610
Rat   TTCGGCTCAAATGCAGGAATGCTTGCTGTCAACGCTGGTATTTTACCTTTAATGGAGCTG
Human TTCGGCTAAAATGCAGAAATGCATGCTGTCAGCGTTGGTATTTCACATTCAATGGAGCTG
               540           550         560         570         580         590
          620           630         640          650         660         670
Rat   AATGTTCAGGACCTCTTCCCATTGAAGCTATCATCTATCTGGACCAAGGAAGCCCTGAGT
Human AATGTTCAGGACCTCTTCCCATTGAAGCTATAATTTATTTGGACCAAGGAAGCCCTGAAA
               600           610         620         630         640         650
          680           690         700         710         720         730
Rat   TAAATTCAACTATTAATATTCATCGTACTTCCTCCGTGGAAGGACTCTGTGAAGGGATTG
Human TGAATTCAACAATTAATATTCATCGCACTTCTTCTGTGGAAGGACTTTGTGAAGGAATTG
               660           670         680         690         700         710
          740           750         760         770         780         790
Rat   GTGCTGGACTGGTAGACGTGGCCATCTGGGTCGGCACCTGTTCAGATTACCCCAAAGGAG
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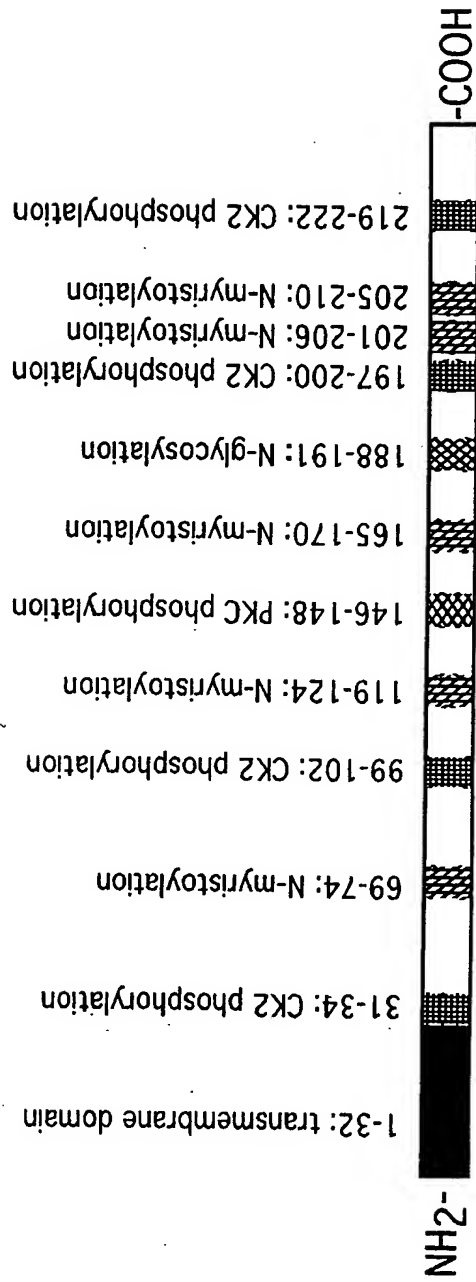
FIG4A

```
Human GTGCTGGATTAGTGGATGTTGCTATCTGGGTTGGCACTTGTTCAGATTACCCAAAAGGAG
         720       730       740       750       760       770
           800       810       820       830       840       850
Rat   ACGCTTCTACTGGGTGGAATTCTGTGTCCCGCATCATCATTGAAGAACTACCAAAATAAA
Human ATGCTTCTACTGGATGGAATTCAGTTTCTCGCATCATTATTGAAGAACTACCAAAATAAA
         780       790       800       810       820       830
           860       870       880       890       900       910
Rat   GCCCCTGAAGGTTTCATTCCCTGCCTCATTTACTTGTTAAATCAAGCCTCTGGATGGGTC
Human TGCTTTAAT--TTTCATTTGCTACCTCTTTTTTT------ATTATGCCTTGGAATGGTTC
         840       850       860            870       880
           920       930       940       950       960       970
Rat   ATTTAAATGACATTTCAGAAGTCACTTATGTGCTCAGCCAAATGAAAAAGCAAAGTTAAA
Human ACTTAAATGACATTTTA-AATAAGTTTATGTATACATCTGAATGAAAA-GCAAAGCTAAA
         890       900       910       920       930       940
           980       990       1000      1010      1020      1030
Rat   TACGTTTACAGACCAAAGTGTGATCTCACACT---TTAAGATCTAGCATTATCCATTTTA
Human TATGTTTACAGACCAAAGTGTGATTTCACACTGTTTTTAAATCTAGCATTATTCATTTTG
         950       960       970       980       990       1000
             1040      1050      1060      1070      1080
Rat   TTTCAACCAAAGATGGTTTCAGGATTTTATTTCTCATT--GATTACTTTTTG--------
Human CTTCAATCAAAAGTGGTTTCAATATTTTTTTAGTTGGTTAGAATACTTTCTTCATAGTCA
         1010      1020      1030      1040      1050      1060
               1090      1100      1110      1120      1130
Rat   ---------AGCCTATATACCGGAATGCTGTTATAGTCTTTAATATTTCCTACT-GTTGA
Human CATTCTCTCAACCTATAATTTGGAATATTGTTGTGGTCTTTTGTTTTTTCTCTTAGTATA
         1070      1080      1090      1100      1110      1120
              1140               1150              1160          1170
1180
Rat   -CATTTTGAAACA--TATAAAAGTTATG--TCTTTGTAAGAGCTGTATA------GAATT
Human GCATTTTTAAAAAAATATAAAAGCTACCAATCTTTGTACAATTTGTAAATGTTAAGAATT
         1130      1140      1150      1160      1170      1180
              1190      1200      1210
Rat   ATTTT---ATATGTTAAATAAA---TGCTTCAAACAA
Human TTTTTTATATCTGTTAAATAAAAATTATTTCCAACAA
         1190      1200      1210      1220
```

FIG4A-1

```
Rat:     1  MHPQGRAASPQLLLGLFLVLLLLLLQLSAPSSASENPKVKQKALIRQREVVDLYNGMCLQG   60
            M+PQG+AASPQ+L+GL+++LLLLLQL+APSSASE+PK+KQKA++RQREVVDLYNGMCLQG
Human:   1  MRPQGPAASPQRLRGL--LLLLLQLPAPSSASEIPKGKQKAQLRQREVVDLYNGMCLQG    58

Rat:    61  PAGVPGRDGSPGANGIPGTPGIPGRDGFKGEKGECLRESFEESWTPNYKQCSWSSLNYGI  120
            PAGVPGRDGSPGANGIPGTPGIPGRDGFKGEKGECLRESFEESWTPNYKQCSWSSLNYGI
Human:  59  PAGVPGRDGSPGANGIPGTPGIPGRDGFKGEKGECLRESFEESWTPNYKQCSWSSLNYGI  118

Rat:   121  DLGKIAECTFTKMRSNSALRVLFSGSLRLKCRNACCQRWYFTFNGAECSGPLPIEAIIYL  180
            DLGKIAECTFTKMRSNSALRVLFSGSLRLKCRNACCQRWYFTFNGAECSGPLPIEAIIYL
Human: 119  DLGKIAECTFTKMRSNSALRVLFSGSLRLKCRNACCQRWYFTFNGAECSGPLPIEAIIYL  178

Rat:   181  DQGSPELNSTINIHRTSSVEGLCEGIGAGLVDVAIWVGTCSDYPKGDASTGWNSVSRIII  240
            DQGSPE+NSTINIHRTSSVEGLCEGIGAGLVDVAIWVGTCSDYPKGDASTGWNSVSRIII
Human: 179  DQGSPEMNSTINIHRTSSVEGLCEGIGAGLVDVAIWVGTCSDYPKGDASTGWNSVSRIII  238

Rat:   241  EELPK  245
            EELPK
Human: 239  EELPK  243
```

FIG4B

MRPAAELGQTLSRAGLCRPLCLLLCASQLPHTMHPQGRAASPQLLLGLFLVLLLLQL

SAPSSASENPKVKQKALIRQREVVDLYNGMCLQGPAGVPGRDGSPGANGIPGTPGIPG

RDGFKGEKGECLRESFEESWTPNYKQCSWSSLNYGIDLGKIAECTFTKMRSNSALRVL

FSGSLRLKCRNACCQRWYFTFNGAECSGPLPIEAIIYLDQGSPELNSTINIHRTSSVE

GLCEGIGAGLVDVAIWVGTCSDYPKGDASTGWNSVSRIIIEELPK
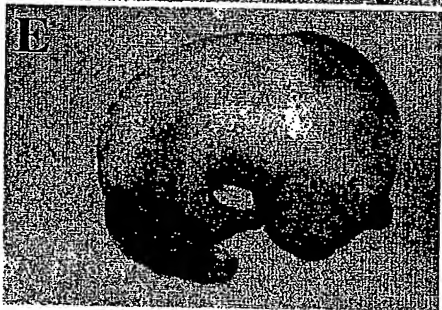
FIG4C
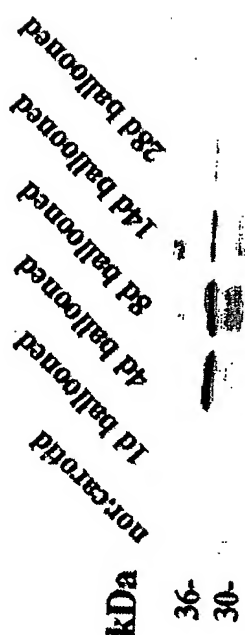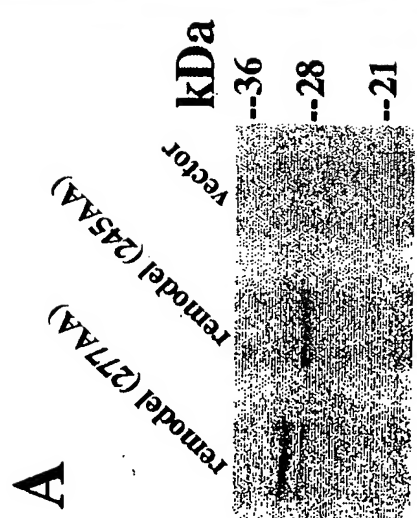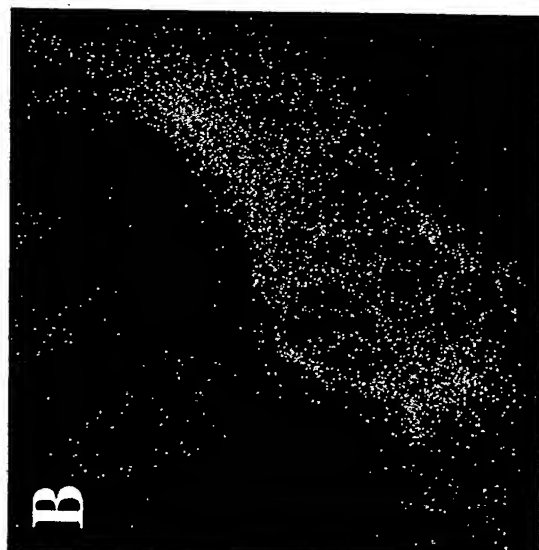
FIG5A

FIG5B

FIG5C
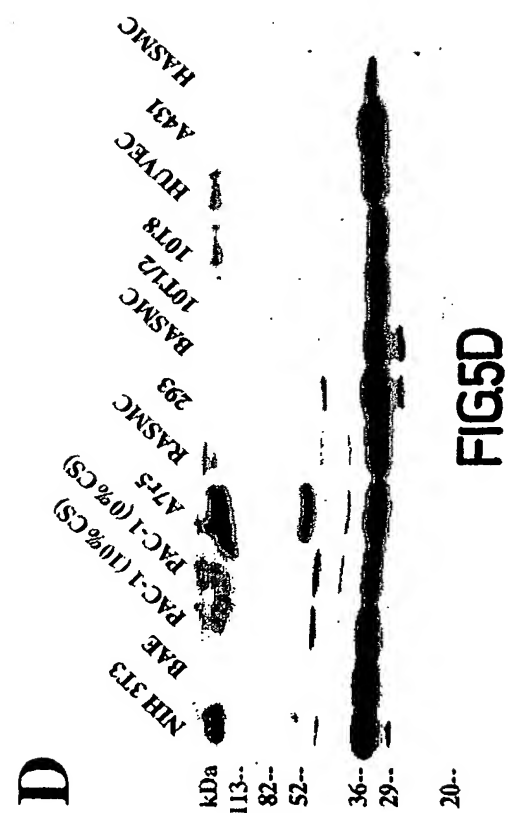
FIG5D
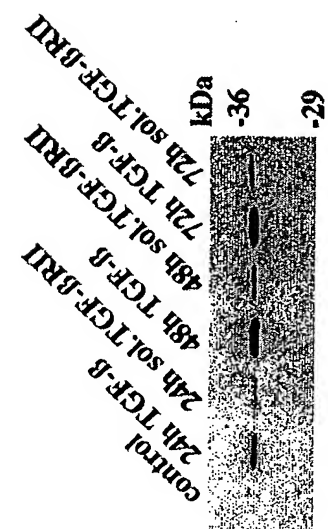
FIG5E
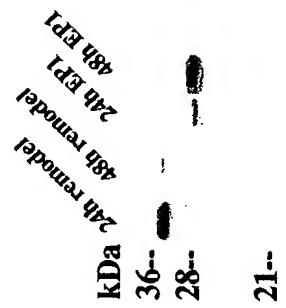
FIG5F

FIG.6A
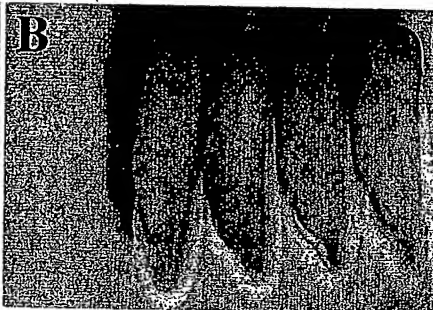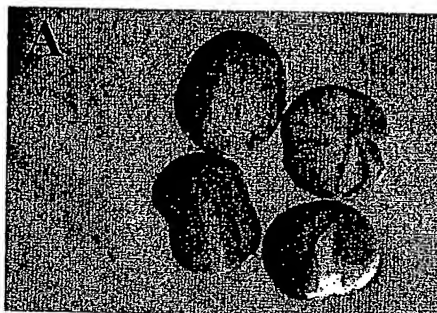
FIG.6B

FIG.6C
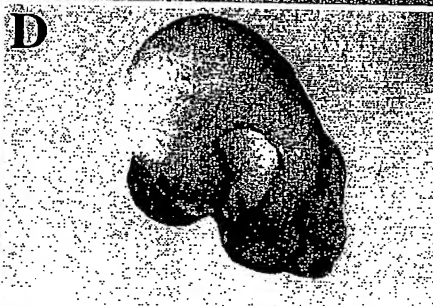
FIG.6D

FIG.6E

ATG GCCCCCAAGG CCGGCGCCGCC TCCCCACAGC TGCTGCTCGG CCTCTTCCTT GTGCTACTGC
TGCTTCTGCA GCTGTCCCGCG CCGTCCAGCG CCTCTGAGAA TCCCAAGGTG AAGCAAAAAG
CGCTGATCCG GCAGAGGGAA GTGGTAGACC TGTATAATGG GATGTGCCTA CAAGGACCAG
CAGGAGTTCC TGGTCGCGAT GGGAGCCCTG GGGCCAATGG CATTCCTGGC ACACCGGGAA
TCCCAGGTCG GGATGGATTC AAAGGAGAGA AAGGGGAGTG CTTAAGGGAA AGCTTTGAGG
AATCCTGGAC CCCAAACTAC AAGCAGTGTT CATGGAGTTC ACTTAATTAT GGCATAGATC
TTGGGAAAAT TGCGGAATGT ACATTCACAA AGATGCCGATC CAACAGCGCT CTTCGAGTTC
TGTTCAGTGG CTCGCTTCGG CTCAAATGCA GGAATGCTTG CTGTCAACGC TGGTATTTTA
CCTTTAATGG AGCTGAATGT TTCCCCATTGA AGCTATCATC TATCTGGACC
AAGGAAGCCC TGAGTTAAAT TCAACTATTA ATATTCATCG TACTTCCTCC GTGGAAGGAC
TCTGTGAAGG GATTGGTGCT GGACTGGTAG ACGTGGCCAT CTGGGTCGGC ACCTGTTCAG
ATTACCCCAA AGGAGACGCT TCTACTGGGT GGAATTCTGT GTCCCGCATC ATCATTGAAG
AACTACCAAA A
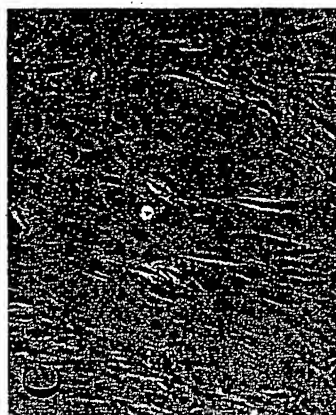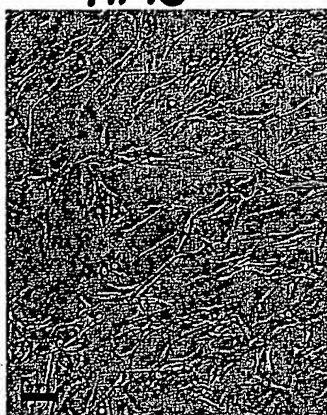
FIG7

FIG8A FIG8D FIG8C
FIG8D FIG8E FIG8F
FIG8G FIG8H FIG8I

FIG9B

FIG9A

A

FIG.10A

B

normal   transg. transg. transg.
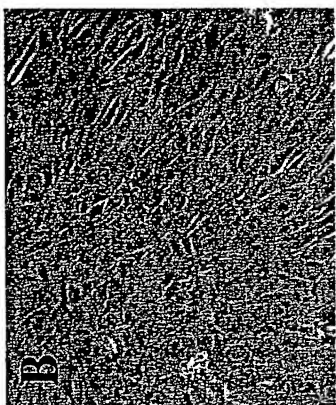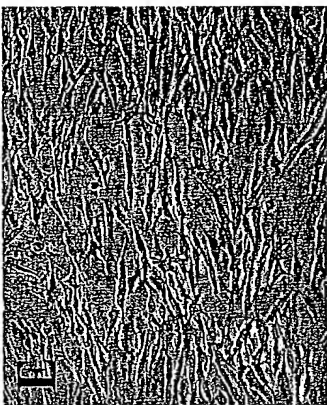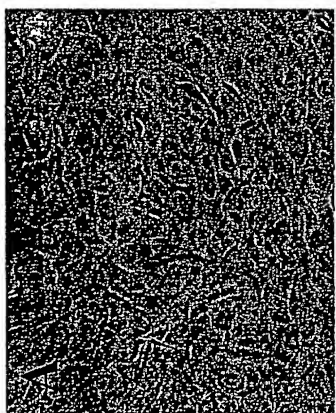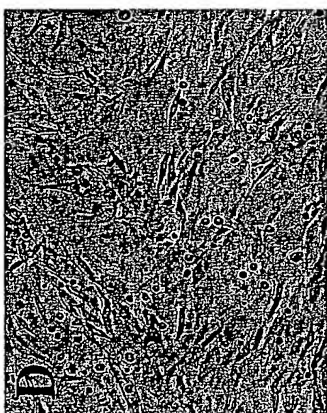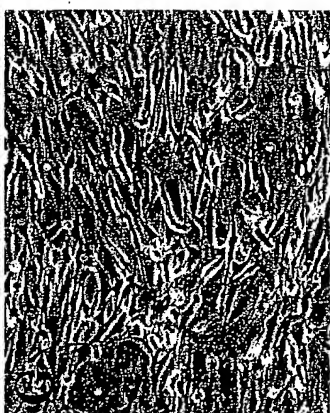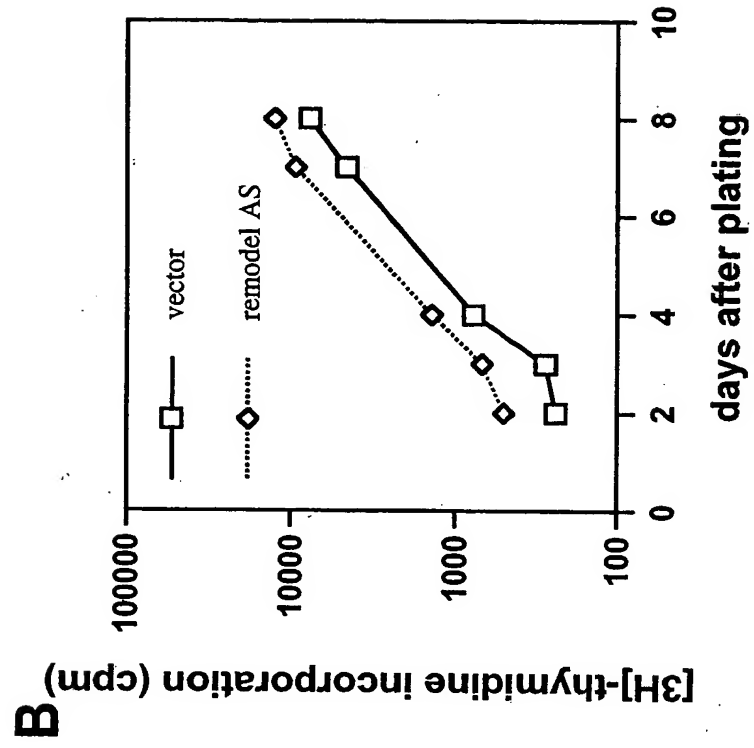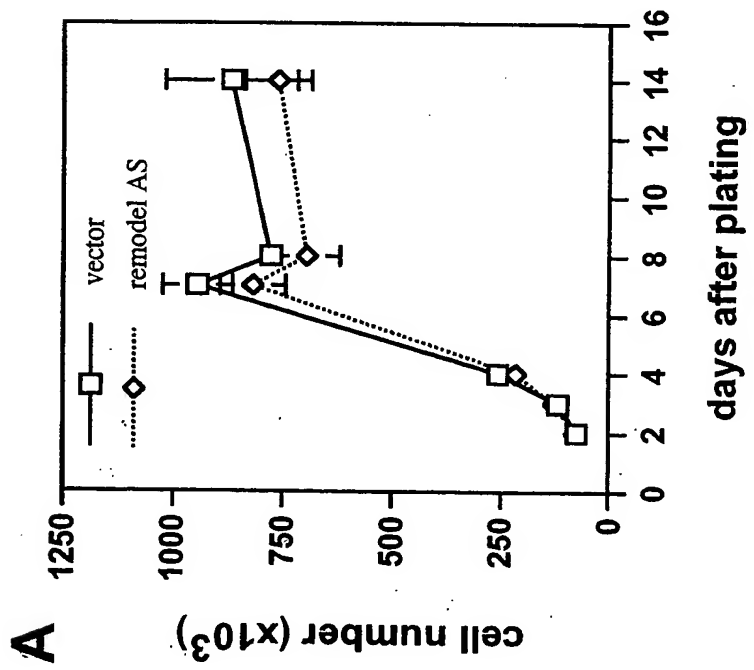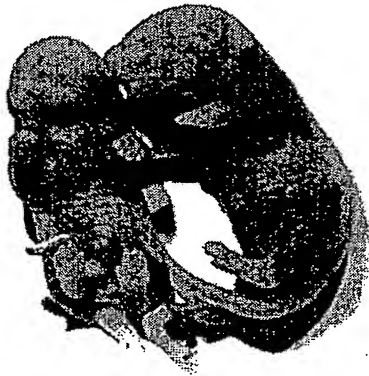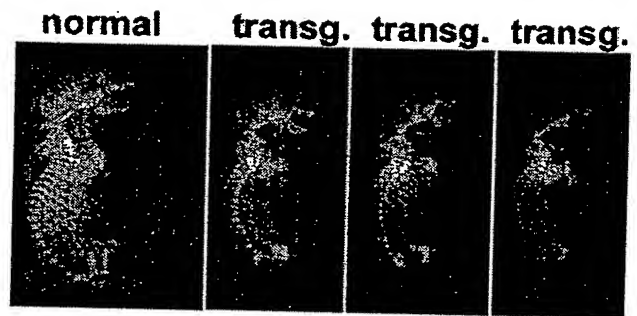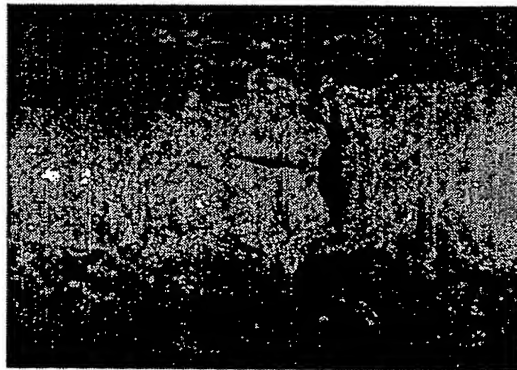
FIG.10B

C

FIG.10C

FIG.11A

FIG.11B

FIG.11C

FIG.11D

FIG.11E

FIG.11F

FIG.11G

FIG.11H

FIG.11H

FIG.11J

CCACCCAGUAGAAGCGUCUCCUUUGGGGUAAAUCUGAACCAGGUGCCGACCCAGAUGGCC
ACGUCUACCAGUCCAGCACCACCAAUCCCUUCACAGAGUCCUUCACGGAGGAAGUACGAU
GAAUAUUAAUAGUUGAAUUUAACUCAGGGCUUCCUUGGUCCAGAGAUAGAUGAUAGCUUC
AAUGGGAAGAGAGGUCCUGAACAUUCAGCUCCAUUAAAGGUAAAAUACCAGCGUUGACAG
CAAGCAUUCCUGCAUUUGAGCCGAGCCACUGAACUCGAAGAGCGCUGU
UGGAUCGCAUCUUUGUGAAUGUACAUCCGCAAUUUCCCAAGAUCUAUGCCAUAAAUU
AAGUGAACUCCAAGAACACUGCUUGUAGUUGGGGUCCAGGAUUCCUCAAAGCUU

FIG. 12